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09/923,081

08/06/2001

Scott J.F. Zogg

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EXAMINER

MOORE JR, MICHAEL J

Kyle Eppele
Rockwell Collins, Inc.
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ART UNIT

PAPER NUMBER

2666

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/923,081

Applicant(s) **6**

ZOGG ET AL.

Examiner

Michael J. Moore, Jr.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 August 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claim **13** is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim **13** fails to further limit claim **10**.

2. Claims **10, 15, and 16** are objected to because of the following informalities:

Regarding claim **10**, on line 6, the word "the" before word "less" should be removed.

Regarding claim **15**, on line 5, an objection is made to the phrase "identifying bits that may be discarded or transmitted" as this is not a positive limitation. The use of the word "may" does not clearly identify the scope of this limitation.

Regarding claim **16**, on line 1, an objection is made to the phrase "wherein the identified bits that may be discarded include" as this is not a positive limitation. The use of the word "may" does not clearly identify the scope of this limitation.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the

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applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. **Claims 1-8, 10-15 and 17-21** are rejected under 35 U.S.C. 102(e) as being anticipated by Krishnarajah et al. (U.S. 2003/0081592) ("Krishnarajah"). Krishnarajah teaches all of the limitations of the listed claims with the reasoning that follows.

Regarding claim 1, "a method for transmitting a file stream using quality of service capable links" is anticipated by the transmission method shown in Figure 4. "Identifying important bits and less important bits within the file stream" is anticipated by step 52 of Figure 4, which identifies groups of bits that are to receive different treatments.

"Negotiating quality of service parameters for at least two streams, wherein one of the two streams has a higher quality of service level" is anticipated by page 1, paragraph [0007], which states the providing of different services or treatments (different quality of service) to different portions of a payload based on the importance of the different payload bits.

"Placing the important bits in the one of the two streams having the higher quality of service level" and "placing the less important bits in a second of the at least two streams" is anticipated by step 58 of Figure 4, which maps the groups of bits to different bearers that have different treatments (QoS). Lastly, "transmitting the at least two streams" is anticipated by the transmission of the stream of packets on the first and second bearers over a communications channel via transmitter 46 as spoken of on page 3, paragraph [0038].

Regarding claim 2, "identifying important bits within the file stream, the important bits being those for which corruption will disrupt an entire frame of the file stream; and separating the important bits from other bits within the file stream" is anticipated by page 4, paragraph [0048], which states that high priority, high quality of service, and/or important bits are identified and appropriately handled without having to treat all of the data in a payload using a higher treatment class.

Regarding claim 3, "negotiating different quality of service parameters for each file stream, the negotiated quality of service corresponding to an identified importance of bits within the file stream" is anticipated by page 1, paragraph [0007], which states the providing of different services or treatments (different quality of service) to different portions of a payload based on the importance of the different payload bits.

Regarding claim 4, "wherein the negotiated quality of service parameter is a bit error rate" is anticipated by page 5, Table 2, which shows a defined residual bit error ratio exists for each bearer traffic class.

Regarding claim 5, "wherein the steps of placing important bits and placing less important bits do not include otherwise encoding the important bits" is anticipated by step 58 of Figure 4, which maps the groups of bits to different bearers that have different treatments (QoS).

Regarding claim 6, "wherein lower layers in a communications stack within a transmitting device perform error detection and correction encoding on the file streams according to the negotiated quality of service" is anticipated by page 6, paragraph

[0058], which states that AMR CODEC applies error correction to Class A bits while tolerating more bit errors (no error protection or lesser degree) in Class B and C bits.

Regarding claim 7, "transmitting the at least two streams over a quality of service capable transmission link" is anticipated by the transmission of the stream of packets on the first and second bearers over a communications channel via transmitter 46 as spoken of on page 3, paragraph [0038].

Regarding claim 8, "wherein the at least two streams are transmitted simultaneously over the quality of service capable transmission link" is anticipated by the transmission of the stream of packets on the first and second bearers over a communications channel via transmitter 46 as spoken of on page 3, paragraph [0038].

Regarding claims 10 and 13, "a system for transmitting compressed data" is anticipated by the UMTS shown in Figure 9. "A network capable of supporting quality of service negotiations" is anticipated by the UTRAN shown in Figure 11 that provides radio bearer services to the radio access bearers, which have respective QoS classes or treatment as spoken of on page 5, paragraph [0054].

"A link capable of supporting quality of service channels" is anticipated by the radio link between user equipment (UE) and the UTRAN of Figure 11 used for transmission of radio bearer services.

Lastly, "a software component for negotiating quality of service parameters with the network, the software component being located above a transport layer of the network, the software component capable of identifying important bits within a file stream and separating the important bits and less important bits in two separate file

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streams having different quality of service parameters” is anticipated by the application program 150 shown in Figure 13 that uses an AMR CODEC 151 to generate a payload which is divided into different payload classes A, B, and C (important bits and less important bits) in block 152 and later mapped onto corresponding radio bearers RB1-RBN as spoken of on page 6, paragraph [0060].

Regarding claim 11, “wherein the network is a wireless network” is anticipated by the network shown in Figure 11 with radio link between user equipment (UE) and the UTRAN.

Regarding claim 12, “wherein the software component is a software plugin applied to existing compiled software” is anticipated by the application program 150 shown in Figure 13 that uses an AMR CODEC 151 to generate a payload which is divided into different payload classes A, B, and C (important bits and less important bits) in block 152 and later mapped onto corresponding radio bearers RB1-RBN as spoken of on page 6, paragraph [0060].

Regarding claim 14, “a method of transmitting and receiving compressed data” is anticipated by the transmission method shown in Figure 4. “Identifying gradations of importance of bits within a file stream” as well as “associating bits within the file stream with the identified gradations of importance such that important bits and less important bits are identified” is anticipated by step 52 of Figure 4, which identifies groups of bits that are to receive different treatments.

“Negotiating quality of service parameters for each of a plurality of file streams, the plurality of file streams equal to a number of gradations of importance” is anticipated

by page 1, paragraph [0007], which states the providing of different services or treatments (different quality of service) to different portions of a payload based on the importance of the different payload bits.

“Separating important bits into a first of the plurality of file streams having a higher level of error correction based on the negotiated quality of service” as well as “separating less important bits into remaining file streams according to their respective gradations of importance” is anticipated by step 58 of Figure 4, which maps the groups of bits to different bearers that have different treatments (different error protection or QoS), as well as page 5, Table 1, which shows different QoS classes of traffic.

“Transmitting the file streams to a receiving device” is anticipated by the transmission of the stream of packets on the first and second bearers over a communications channel via transmitter 46 as spoken of on page 3, paragraph [0038].

“Synchronizing the file streams received by the receiving device” is anticipated by the processing and classification of packets by a packet processor in steps 92 and 94 of Figure 6. Lastly, “combining the received file streams into a single stream” and “passing the single stream to a device for viewing” is anticipated by the combining of packet bits into a data payload and providing this payload as user data to an application in the receiving host as spoken of on page 3, paragraph [0041].

Regarding claim 15, “identifying bits that must be correctly received by the receiving device for a successful transmission” and “identifying bits that may be discarded or transmitted via lossy compression techniques without detectable signal degradation” is anticipated by page 4, paragraph [0048], which states that high priority,

high quality of service, and/or important bits are identified and appropriately handled without having to treat all of the data in a payload using a higher treatment class.

Regarding claim 17, “negotiating quality of service parameters comprises: negotiating a bit error rate” is anticipated by page 5, Table 2, which shows a defined residual bit error ratio exists for each bearer traffic class.

Regarding claim 18, “wherein negotiating quality of service parameters comprises: negotiating a latency rate and a consistent throughput rate” is anticipated by page 5, Table 2, which shows a defined transfer delay (latency rate) and guaranteed bit rate (consistent throughput rate) exist for each bearer traffic class.

Regarding claim 19, “wherein separating important bits and separating less important bits does not include encoding the important bits or the less important bits” is anticipated by step 58 of Figure 4, which maps the groups of bits to different bearers that have different treatments (QoS). Lastly, “wherein lower layers of a communication stack on the network perform error detection and correction encoding according to the negotiated quality of service parameters” is anticipated by page 6, paragraph [0058], which states that AMR CODEC applies error correction to Class A bits while tolerating more bit errors (no error protection or lesser degree) in Class B and C bits.

Regarding claim 20, “passing the file streams down a communications stack on the network, wherein each layer of the communications stack adds error correction and detection coding consistent with the negotiated quality of service parameters” is anticipated by page 6, paragraph [0058], which states that AMR CODEC applies error correction to Class A bits while tolerating more bit errors (no error protection or lesser

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degree) in Class B and C bits. Lastly, "transmitting the streams over a quality of service capable link" is anticipated by the transmission of the stream of packets on the first and second bearers over a communications channel via transmitter 46 as spoken of on page 3, paragraph [0038].

Regarding claim **21**, "wherein synchronizing and combining the received file streams is performed by an embedded component on the receiving device" is anticipated by the combining of packet bits into a data payload and providing this payload as user data to an application in the receiving host by a packet processor (embedded component) as spoken of on page 3, paragraphs [0040] and [0041].

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary.

Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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7. Claims **9 and 16** are rejected under 35 U.S.C. 103(a) as being unpatentable over Krishnarajah et al. (U.S. 2003/0081592) ("Krishnarajah").

Regarding claim **9**, Krishnarajah teaches the method of claim **1**. Krishnarajah does not explicitly teach where a received signal quality is improved as much as 2dB to 5dB on noisy transmission channels without causing additional delays in the transmission. However, Krishnarajah does teach how important bits are identified and appropriately handled without having to treat all of the data in a payload using a higher treatment class in order to conserve bandwidth on page 4, paragraph [0048]. Krishnarajah also teaches that unequal error protection is employed in a way that is transparent to routers and intermediate nodes so that forwarding speed/performance is not impacted on page 4, paragraph [0048]. It would have been obvious to someone skilled in the art to use the packet classification and unequal error protection teachings of Krishnarajah in order to improve the signal quality to some degree.

Regarding claim **16**, Krishnarajah teaches the method of claim **15**. Krishnarajah does not explicitly teach wherein the identified bits that may be discarded include sounds beyond the range of human hearing or sounds overwhelmed by other sounds for audio transmissions, white lines or extremely fine detail within an image, white lines between lines of text on a page, and identically shaded pixels within an image. However, Krishnarajah does teach the dividing of payload data into different classes of treatment based upon importance of the individual bits on page 1, paragraph [0007]. It would have been obvious to someone skilled in the art to use the teachings of Krishnarajah to identify the above sounds and white lines and identically shaded pixels

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as less important bits of information in order to allow more important bits of information to be transmitted more efficiently.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Sinha et al. (U.S. 6,292,917), Sinha et al. (U.S. 6,405,338), Choi et al. (U.S. 6,757,860), Seshadri et al. (U.S. 6,044,073), Chen et al. (U.S. 6,658,019), Weerackody et al. (U.S. 5,671,156), and Yoshida (U.S. 5,729,526) are all references that contain material pertinent to this application.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael J. Moore, Jr. whose telephone number is (571) 272-3168. The examiner can normally be reached on Monday-Friday (8:30am - 5:00pm).


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema S. Rao can be reached at (571) 272-3174. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Michael J. Moore, Jr.
Examiner
Art Unit 2666

mjm MM


FRANK DUONG
PRIMARY EXAMINER